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VAPORIZATION NOZZLE OF AEROSOL SPRAYER

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Foreign Technology Division  
Wright-Patterson Air Force Base, Ohio

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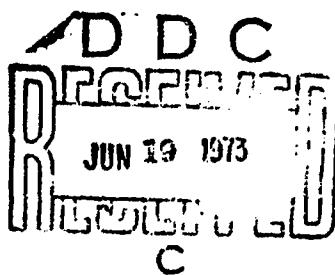
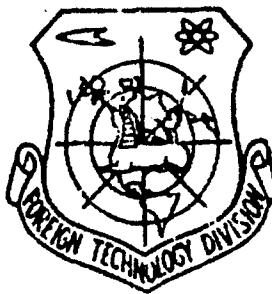
## FOREIGN TECHNOLOGY DIVISION



### VAPORIZATION NOZZLE OF AEROSOL SPRAYER

by

M. I. Gubarev, Zh. V. Sudit, et al.



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Block	Italic	Transliteration	Block	Italic	Transliteration
А а	А а	А, á	Р р	Р р	Р, r
Б б	Б б	Б, b	С с	С с	С, s
В в	В в	В, v	Т т	Т т	Т, t
Г г	Г г	Г, g	У у	У у	У, u
Д д	Д д	Д, d	Ф ф	Ф ф	Ф, f
Е е	Е е	Ye, ye; E, e*	Х х	Х х	Kh, kh
Ж ж	Ж ж	Zh, zh	Ц ц	Ц ц	Ts, ts
З з	З з	Z, z	Ч ч	Ч ч	Ch, ch
И и	И и	I, i	Ш ш	Ш ш	Sh, sh
Я я	Я я	Y, y	Щ щ	Щ щ	Shch, shch
К к	К к	K, k	Ь ъ	Ь ъ	"
Л л	Л л	L, l	Ы ы	Ы ы	Y, y
М м	М м	M, m	Ь ь	Ь ь	'
Н н	Н н	N, n	Э э	Э э	E, e
О о	О о	О, o	Ю ю	Ю ю	Yu, yu
П п	П п	Р, p	Я я	Я я	Ya, ya

\* ye initially, after vowels, and after т, б; е elsewhere.  
 When written as є in Russian, transliterate as ѿ or є.  
 The use of diacritical marks is preferred, but such marks  
 may be omitted when expediency dictates.

## VAPORIZATION NOZZLE OF AEROSOL SPRAYER

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A. S. Vasil'yeva

(Applicant: Chief Specialized Design  
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Protection of Plants)

The invention pertains to the installation of ejection vaporization nozzles for aerosol sprayers used for the protection of plants from pests and diseases.

There are known designs of the vaporization nozzles in which the cavity between the nozzle and its jacket is a continuation of the cavity between the combustion chamber and its jacket. The air flowing through the cavity between the combustion chamber and its jacket enters this combustion chamber through a series of openings. The excess of air passes further into the cavity between the vaporizing nozzle and its jacket and, flowing around the nozzle, cools it.

This design requires an increase in the production of the air supplying device to the amount of air consumption necessary to cool the nozzle, which increases the power used by the aerosol sprayer. Furthermore, the cooling conditions of the nozzle worsen because the air flowing through the cavity along the combustion

chamber is heated to a temperature considerably higher than that of the ambient air.

The distinguishing feature of the proposed vaporization nozzle is the fact that to improve the cooling conditions of the nozzle and, at the same time, to decrease the power expenditure used by the aerosol sprayer, attaching the vaporization adapter and the external shield to the combustion chamber and its jacket is accomplished by means of a flange separating the space between the combustion chamber and its jacket from the cavity between the adapter and the shield which has an opening for ejecting the atmospheric air.

The longitudinal cross section of the described vaporization nozzle is shown in the diagram.

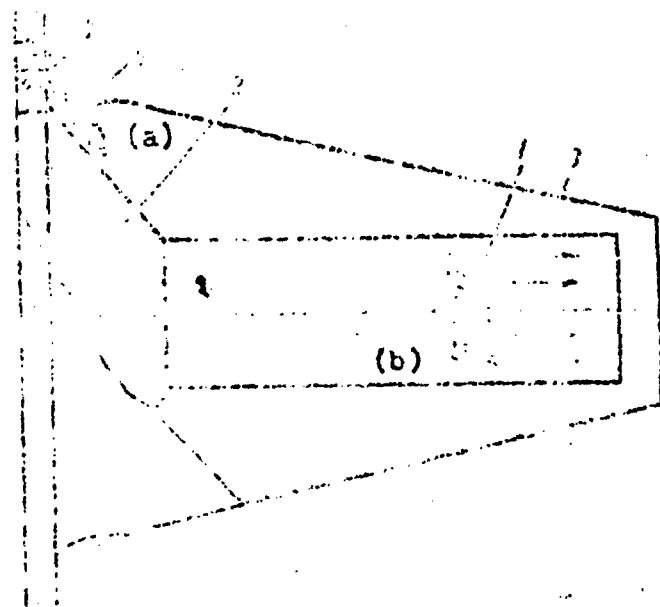
The nozzle consists of vaporizing adapter 1 with inlet cone 2, external guard 3 and flange 4. The external guard has holes 5 connecting the cavity between it and the adapter with the atmospheric air. Flange 4 serves for attaching the vaporizing nozzle to the combustion chamber and for isolating the cavity between the combustion chamber and its jacket from the cavity between the vaporization nozzle and its guard.

The vaporization ejection nozzle is made such that the edge surface of the vaporizing nozzle is imbedded inside the guard at a certain distance from the edge surface of the latter. Also, a certain circular clearance is positioned on the diameter at the narrowest point between them.

The gas flow exiting at high velocity from adapter 1, due to injection, creates a negative pressure in the cavity between the adapter and the guard. As a result of this, the atmospheric air is sucked in through openings 5 into the circular channel and, flowing around inlet cone 2 and adapter 1, cools them.

Object of the invention

The aerosol sprayer vaporization nozzle consisting of, attached to the combustion chamber and its jacket, a vaporization adapter with an external guard for supplying the cooling air into the cavity between them is distinguished by the fact that to improve the cooling conditions for the nozzle and at the same time decrease the power expenditure used by the aerosol sprayer, attaching the vaporization adapter and the external guard to the combustion chamber and its jacket is accomplished by means of a flange separating the space between the combustion chamber and its jacket from the cavity between the adapter and the guard which has openings for ejecting the atmospheric air.



REF: (a) Air; (b) Gas flow.

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